Stoller
Hanford Office

HGLP-LDR-034

299-W26-4 (A8059)
Log Data Report

Borehole Information:

Borehole:	299-E26-4 (A8630)		Site:	216-S-5 Crib	
Coordinates (WA St Plane)		GWL[1] (ft):	None	GWL Date:	10/26/06
North (m)	East (m)	Drill Date	TOC Elevation	Total Depth (ft)	Type
133500.934	566369.97	06/54	655.44 ft	77	Cable

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Welded Steel	2.0	8 5/8	8	5/16	2.0	77

Borehole Notes:

The logging engineer measured the casing diameter of the 8-in. casing using a caliper and steel tape. Logging data acquisition is referenced to the TOC. The driller's log states "water came in at 77 ft." No water was observed at the time of logging. During groundwater resource protection well maintenance in 1990, the well casing was extended to a required height above ground surface. It is not known if the reported elevation is to the top of this new casing height.

Logging Equipment Information:

Logging System:	Gamma 4N		Type:	SGLS (60%) SN: 45TP22010A
Effective Calibration Date:	04/06/06	Calibration Reference:	DOE-EM/GJ1177-2006	
		Logging Procedure:	HGLP-MAN-002, Rev.0	

Logging System:	Gamma 4H		Type:	NMLS SN: H310700352
Effective Calibration Date:	11/22/06	Calibration Reference:	HGLP-CC-002	
		Logging Procedure:	HGLP-MAN-002, Rev.0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat			
Date	11/08/06	11/08/06			
Logging Engineer	McClellan	McClellan			
Start Depth (ft)	72.0	72.0			
Finish Depth (ft)	2.0	65.0			
Count Time (sec)	100	100			
Live/Real	R	R			
Shield (Y/N)	N	N			
MSA Interval (ft)	1.0	1.0			
ft/min	N/A[2]	N/A			
Pre-Verification	DN431CAB	DN431CAB			
Start File	DN431000	DN431071			
Finish File	DN431070	DN431078			
Post-Verification	DN431CAA	DN431CAA			

Log Run	1	2 Repeat			
Depth Return Error (in.)	0	- 0.5			
Comments	Fine-gain adjustment after file -000.	No fine-gain adjustment.			

Neutron Moisture Logging System (NMLS) Log Run Information:

Log Run	3	4 Repeat			
Date	11/09/06	11/09/06			
Logging Engineer	McClellan	McClellan			
Start Depth (ft)	72.0	72.0			
Finish Depth (ft)	2.0	65.0			
Count Time (sec)	15	15			
Live/Real	R	R			
Shield (Y/N)	N	N			
Sample Interval (ft)	0.25	0.25			
ft/min	1.0	1.0			
Pre-Verification	DH262CAB	DH262CAB			
Start File	DH262000	DH262281			
Finish File	DH262280	DH262309			
Post-Verification	DH262CAA	DH262CAA			
Depth Return Error (in.)	0	0			
Comments	None	None			

Logging Operation Notes:

Logging was conducted with a centralizer on each sonde and measurements are referenced to top of casing.

Analysis Notes:

Analyst:	Henwood	Date:	12/05/06	Reference:	GJO-HGLP 1.6.3, Rev. 0

Pre-run and post-run verifications for the logging systems were performed before and after the day's data acquisition. The acceptance criteria were met for the SGLS and NMLS.

A casing correction for a 5/16-in. thick was applied to the SGLS data. NMLS data were corrected for an 8-in. borehole.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to identify individual energy peaks and determine count rates. Concentrations were calculated with an EXCEL worksheet template identified as G4NApr06.xls using an efficiency function and corrections for casing and dead time as determined from annual calibrations. The NMLS count rate data were converted to percent volumetric moisture.

Results and Interpretations:

^{137}Cs was detected near the ground surface at a concentration of less than 1 pCi/g. Other detections of 137Cs in the borehole are statistical fluctuations and are not considered valid.

The driller's log indicates "coarse gravel and cobbles" from 55 to 65 ft. These gravels are reflected by relatively low KUT concentrations from log depths of 57 to 68 ft. A fine sand reported by the driller at 70 ft is indicated at 68 ft by the SGLS. The borehole is currently not deep enough to encounter any water reported by the driller in 1954 at 77 ft.

Moisture data indicate some variability.

The SGLS and NMLS repeat logs show good repeatability.

List of Log Plots:

Depth Reference is top of casing
Depth Scale - 20 ft/inch except for repeat logs

Man-made Radionuclides
Natural Gamma Logs
Combination Plot
Total Gamma, Dead Time, & Moisture
Repeat of Natural Gamma Logs
Repeat of Total Gamma, Dead Time, & Moisture

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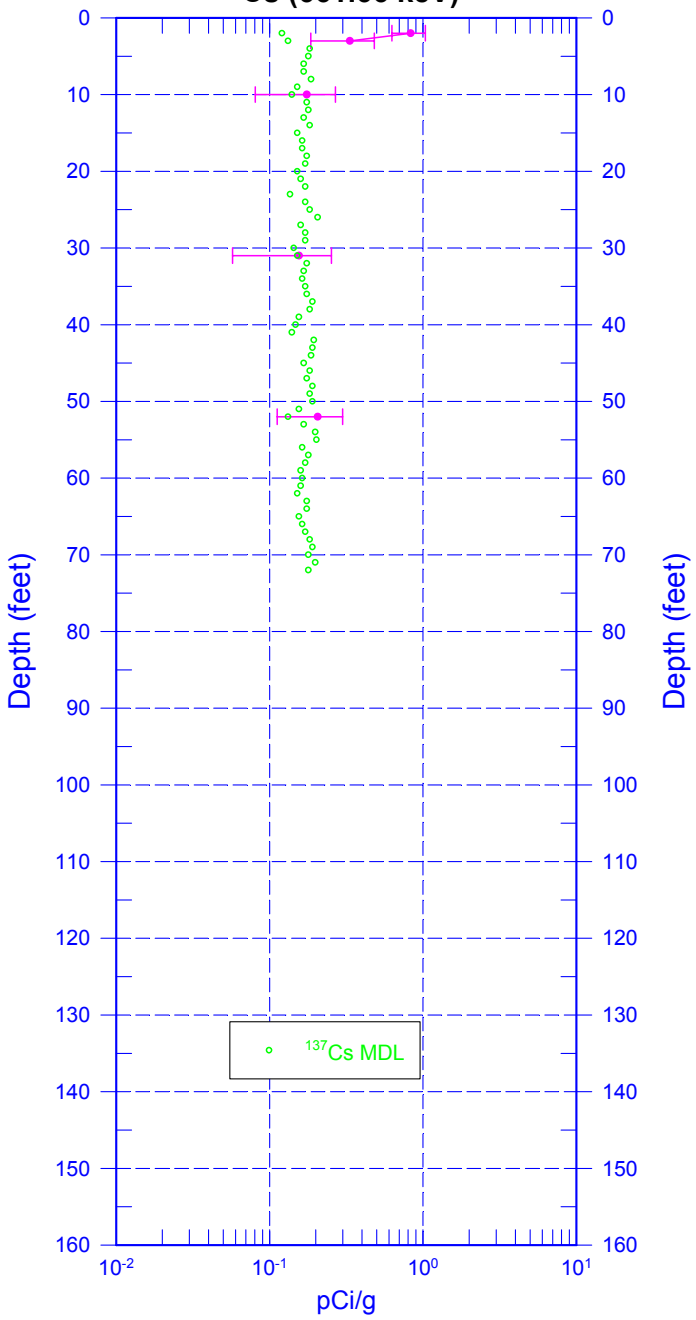
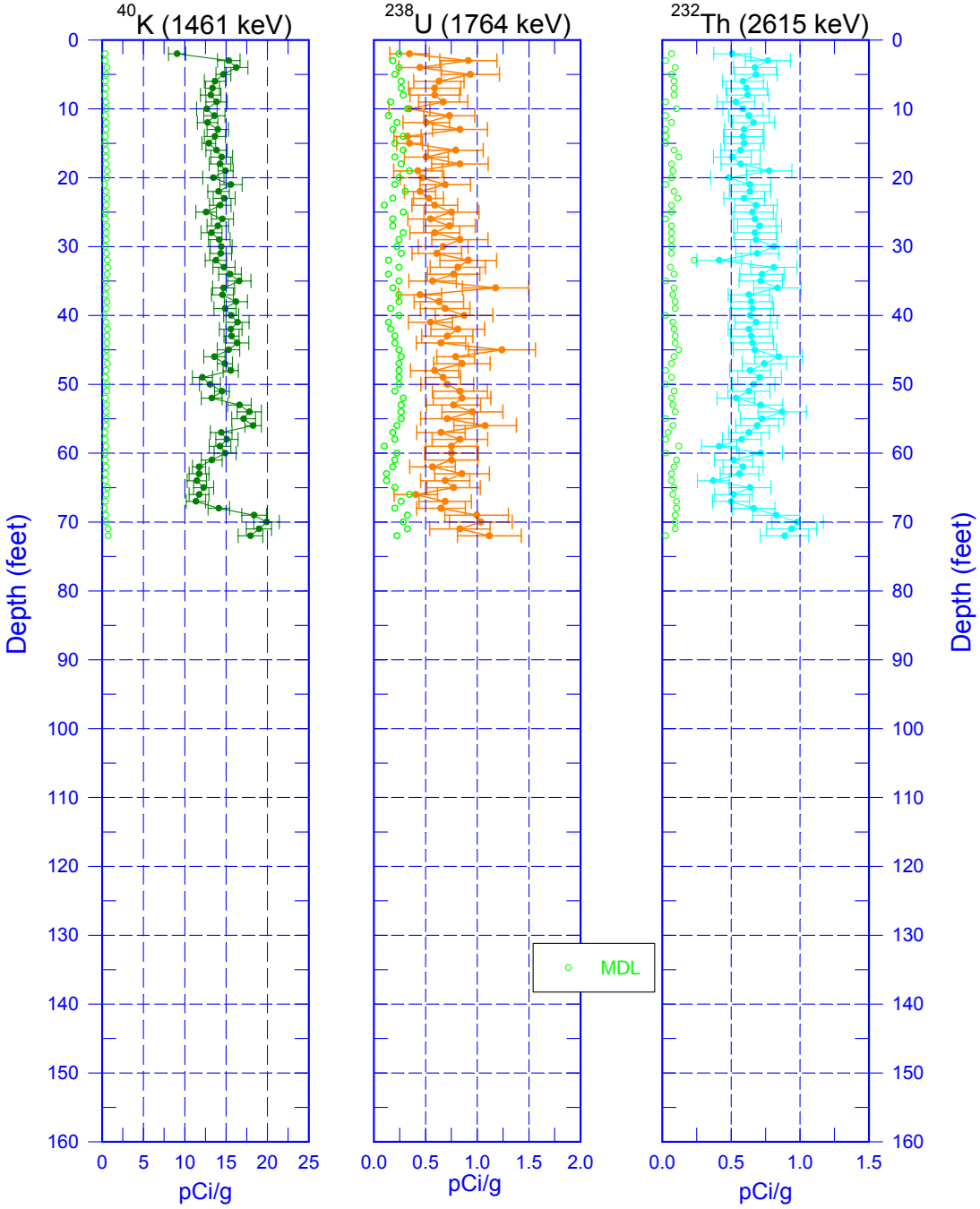
[1] GWL – groundwater level

299-W26-4 (A8059)
Manmade Radionuclides



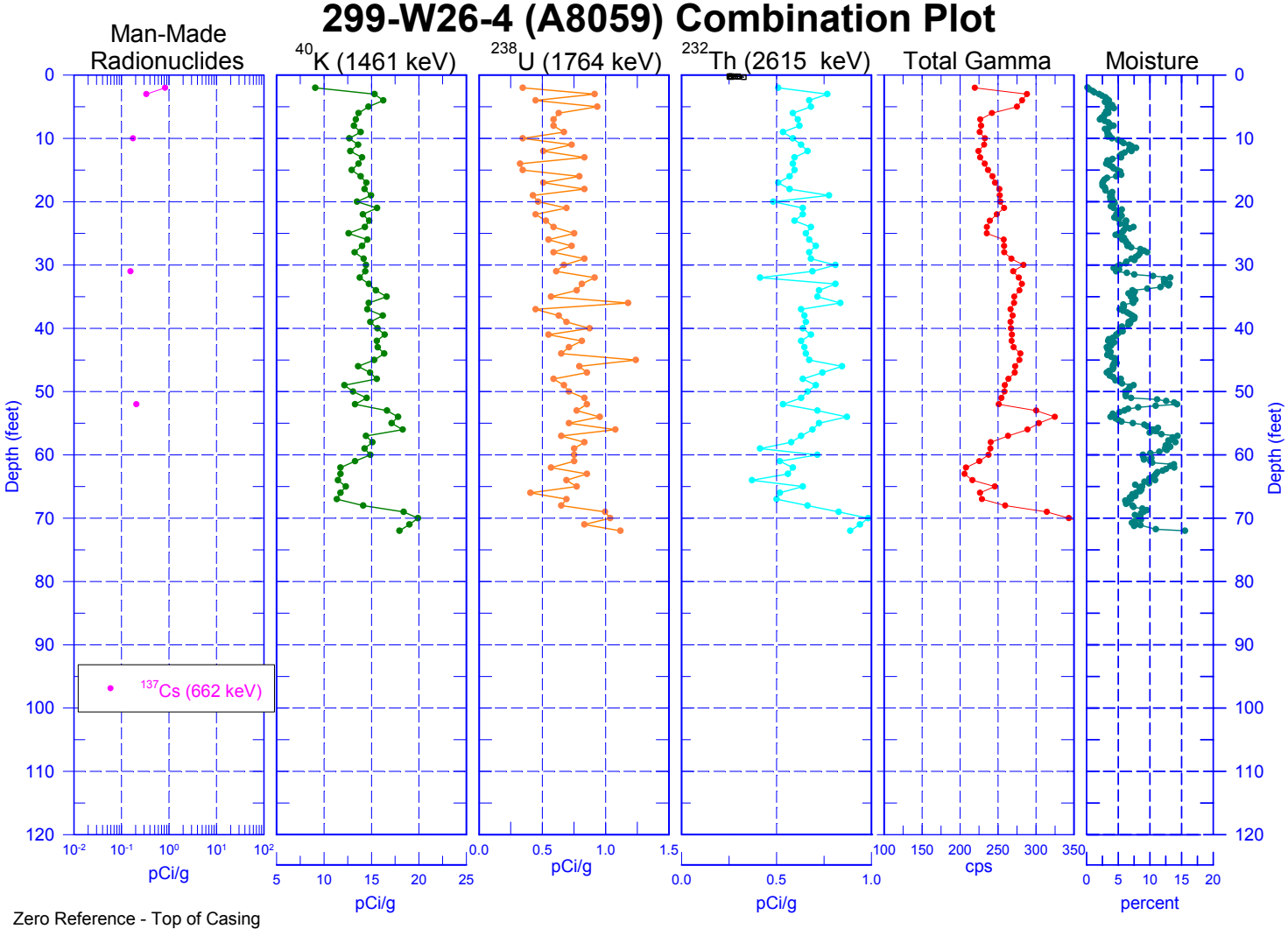
Zero Reference - Top of Casing

299-W26-4 (A8059)
Natural Gamma Logs



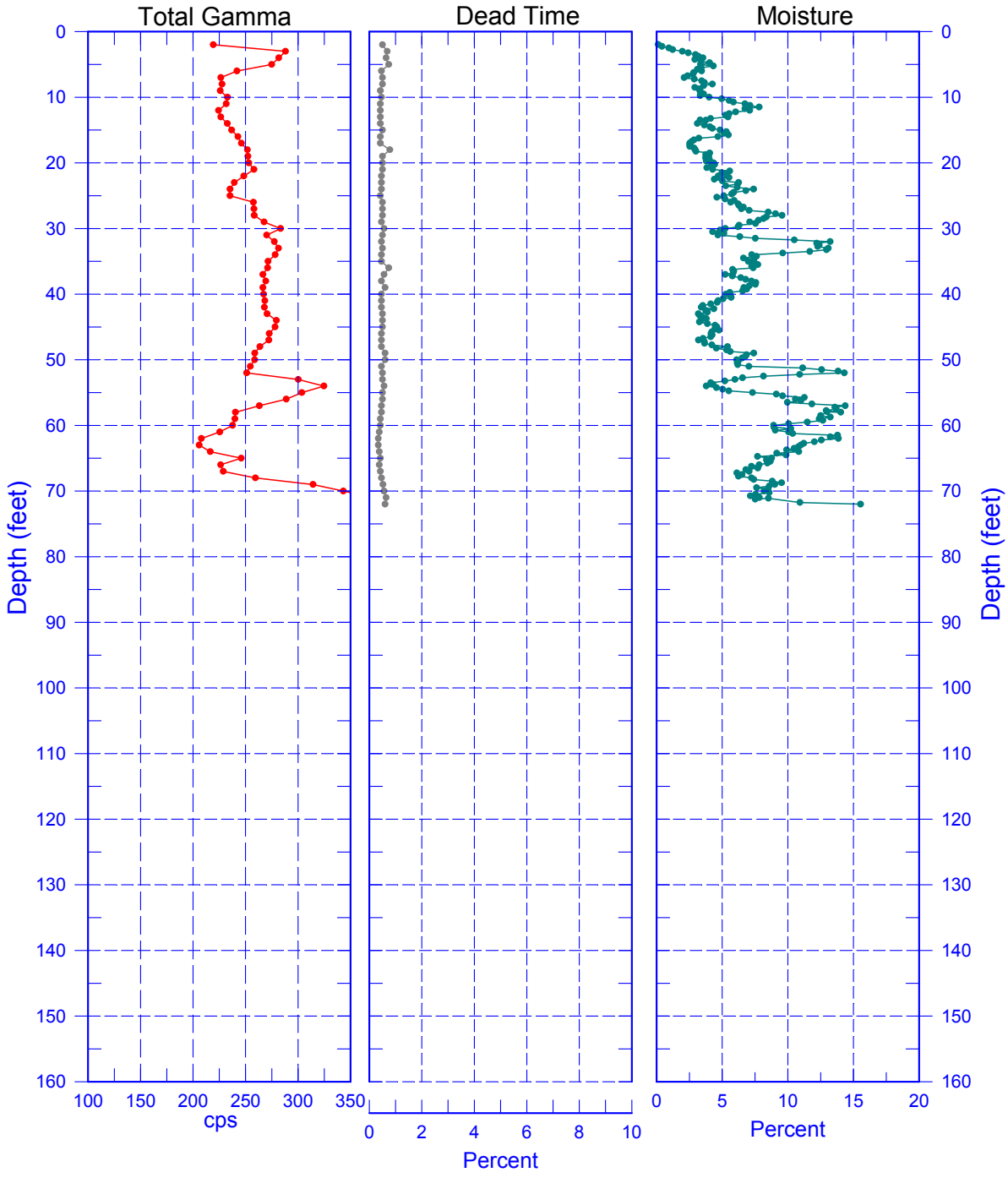
Zero Reference = Top of Casing

299-W26-4 (A8059) Combination Plot



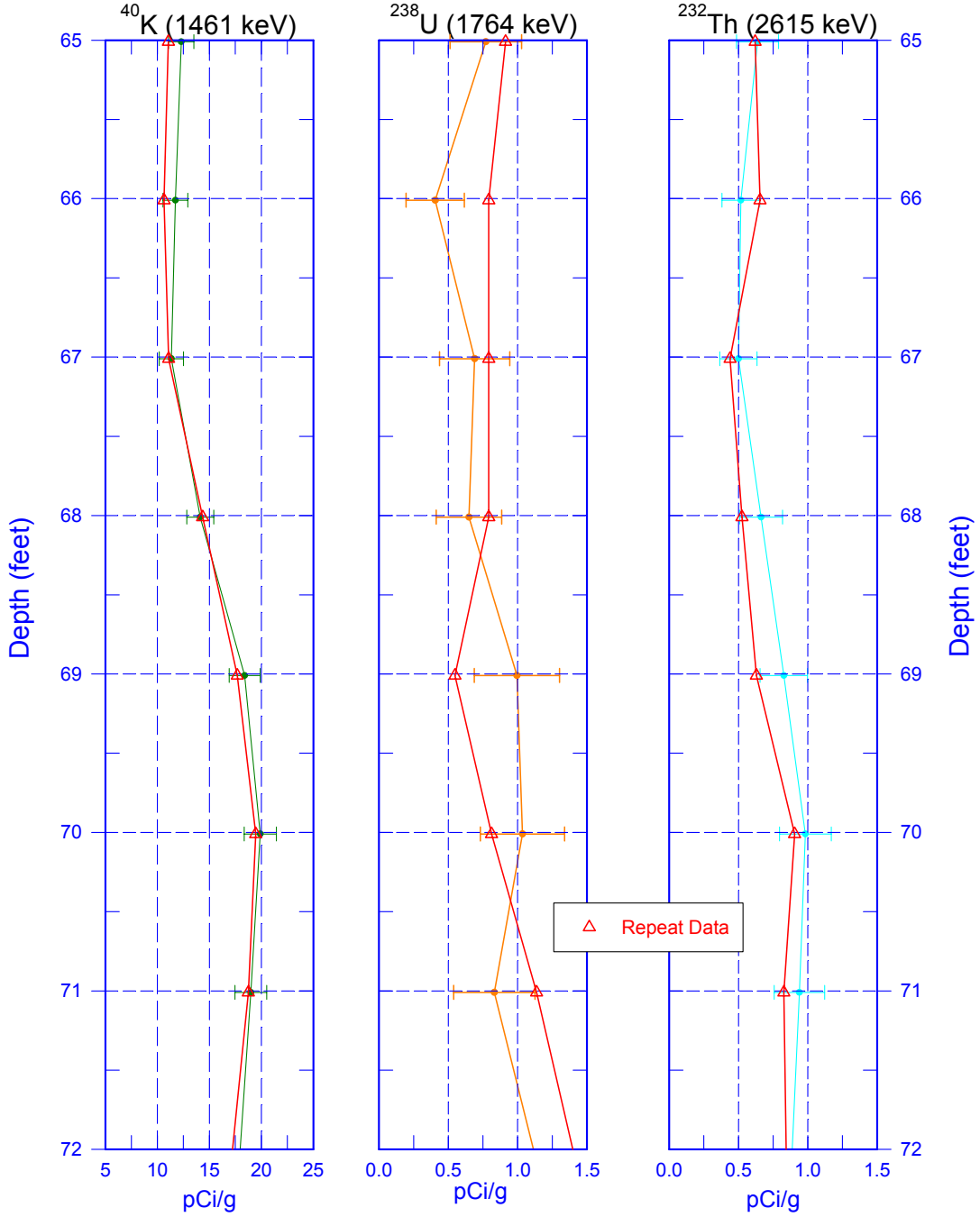
Zero Reference - Top of Casing

299-W26-4 (A8059)
Total Gamma, Dead Time & Moisture



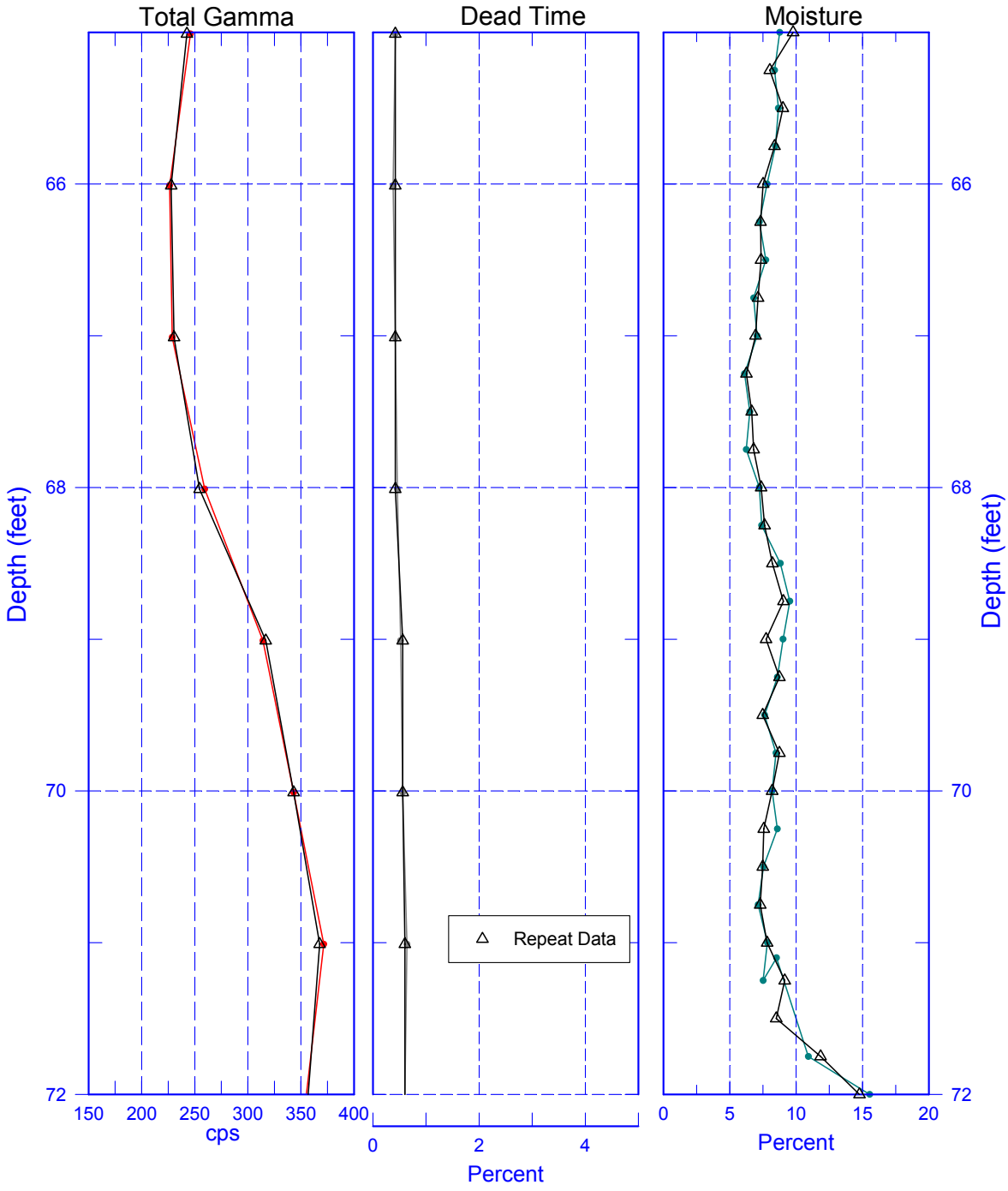
Reference - Top of Casing

299-W26-4 (A8059)
Repeat of Natural Gamma Logs



Zero Reference = Top of Casing

299-W26-4 (A8059)
Repeat of Total Gamma, Dead Time & Moisture



Reference - Top of Casing